

WHAT IS CLAIMED IS:

1. A composition comprising monoclonal antibody 3G4, or an antigen-binding region or
5 immunoconjugate thereof, wherein said monoclonal antibody is produced by hybridoma
ATCC PTA 4545 and binds to the aminophospholipid, phosphatidylserine.
2. The composition of claim 1, wherein said composition comprises said monoclonal
10 antibody 3G4.
3. The composition of claim 1, wherein said composition comprises an antigen-binding
15 region of said monoclonal antibody 3G4.
4. The composition of claim 3, wherein said antigen-binding region is an scFv, Fv, Fab',
Fab or F(ab')₂ antigen-binding region.
- 20 5. The composition of claim 1, wherein said composition comprises a humanized or
part-human chimeric form of said 3G4 monoclonal antibody, or an antigen-binding region or
immunoconjugate thereof.
- 25 6. The composition of claim 1, wherein said composition comprises an
immunoconjugate of said monoclonal antibody 3G4.
- 30 7. The composition of claim 3, wherein said immunoconjugate comprises said
monoclonal antibody 3G4, or an antigen-binding region thereof, operatively attached to an
anticellular agent; cytotoxic agent; chemotherapeutic agent; cytokine; plant-, fungus- or
bacteria-derived toxin; or coagulation factor.

8. The composition of claim 3, wherein said immunoconjugate comprises said monoclonal antibody 3G4, or an antigen-binding region thereof, operatively attached to a diagnostic agent or detectable label.

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9. The composition of claim 1, wherein said composition is a pharmaceutically acceptable composition.

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10. The composition of claim 1, wherein said composition further comprises a second anti-cancer agent.

15 11. The composition of claim 10, wherein said second anti-cancer agent is a chemotherapeutic agent; radiotherapeutic agent; an anti-angiogenic agent; an apoptosis-inducing agent; or an antibody-therapeutic agent construct comprising a targeting antibody, or antigen-binding fragment thereof, which binds to a surface-expressed, surface-accessible or surface-localized component of a tumor cell, tumor stroma or tumor vasculature, said
20 targeting antibody or fragment thereof operatively linked to a therapeutic agent.

12. Monoclonal antibody 3G4 produced by hybridoma ATCC PTA 4545.

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13. A kit comprising, in at least a first composition, a biologically effective amount of the composition of claim 1 and a second anti-cancer agent.

30 14. A method for treating an animal having a vascularized tumor, comprising administering to said animal a therapeutically effective amount of a composition comprising monoclonal antibody 3G4, or an antigen-binding region or immunoconjugate thereof, wherein said monoclonal antibody is produced by hybridoma ATCC PTA 4545 and binds to the aminophospholipid, phosphatidylserine.

15. The method of claim 14, wherein said composition comprises an unconjugated form of said monoclonal antibody 3G4, or an antigen-binding region thereof.

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16. The method of claim 14, wherein said composition comprises an immunoconjugate of said monoclonal antibody 3G4.

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17. The method of claim 14, wherein said 3G4 monoclonal antibody, or antigen-binding region or immunoconjugate thereof binds to phosphatidylserine on the luminal surface of blood vessels of said vascularized tumor.

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18. The method of claim 14, further comprising simultaneously or sequentially administering to said animal a therapeutically effective amount of at least a second anti-cancer agent.

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19. The method of claim 14, wherein said animal is a human patient.